

What Is Claimed Is:

1. In a communication system receiver, a method of adjusting an outer loop threshold (OLT) for power control comprising:

- 5           obtaining a frame quality indicator; and  
            obtaining a channel quality metric  $E_b/N_t$ ;  
            if the frame quality indicator is equal to a logic zero,  
            obtaining an average  $E_b/N_t$  ( $avgE_bN_t$ ); and  
            using  $E_b/N_t$  and  $avgE_bN_t$  to calculate a stepsize used to  
10       increase the OLT.

2. The method of claim 1 wherein the stepsize is calculated using the equation  $upDelta = baseUpDelta \cdot (E_b/N_t) / avgE_bN_t$  and wherein  $baseUpDelta$  is a predetermined scaling factor.

- 15       3. The method of claim 2 wherein the OLT is increased using the equation  $OLT(n) = OLT(n-1) \times upDelta$ .

- 20       4. The method of claim 1 wherein the channel quality metric  $E_b/N_t$  is calculated using the equation  $E_b/N_t = (\sum_{i=1}^N sgn(Out(i)) \cdot ln(i))^2 / (\sum_{i=1}^N ln(i)^2 - (\sum_{i=1}^N sgn(Out(i)) \cdot ln(i))^2)$ .

5. In a communication system receiver having a target frame error rate (tFER), a method of adjusting an outer loop threshold (OLT) for power control comprising:

obtaining a frame quality indicator; and

5 if the frame quality indicator is equal to a logic one for an adaptively determined amount of consecutive frames, decreasing the OLT.

6. The method of claim 5 further comprising using the frame quality indicator to calculate a measured frame error rate (mFER) and wherein the amount of frames is adaptively determined using the equation

10 adaptively determined amount of frames =  $mFER/tFER^2$ .

7. The method of claim 5 further comprising the steps of:

obtaining channel quality metrics  $E_b/N_t$ ;

15 obtaining an average  $E_b/N_t$  (avgEbNt);

obtaining a minimum  $E_b/N_t$  (minEbNt); and

using avgEbNt and minEbNt to calculate a stepsize used to decrease the OLT.

20 8. The method of claim 7 wherein the stepsize is calculated using the equation  $dnDelta = baseDnDelta \cdot avgEbNt / minEbNt$  and wherein baseDnDelta is a predetermined scaling factor.

9. The method of claim 8 wherein the OLT is decreased using the equation  $OLT(n) = OLT(n-1) / dnDelta$ .

25

10. In a communication system receiver having a target frame error rate (tFER), a method of adjusting an outer loop threshold (OLT) for power control comprising:

obtaining a frame quality indicator;

5 if the frame quality indicator is not equal to a logic zero and the frame quality indicator is not equal to a logic one for an adaptively determined amount of consecutive frames, adjusting the OLT according to a comparison of a fadeDepth(i) and a fadeDepth(i-1).

10 11. The method of claim 10 wherein the OLT is adjusted using the equation  $OLT(i) = OLT(i-1) \cdot \text{floatDelta}$ , when  $\text{fadeDepth}(i) > \text{fadeDepth}(i-1)$ .

12. The method of claim 10 wherein the OLT is adjusted using the equation  $OLT(i) = OLT(i-1) / \text{floatDelta}$ , when  $\text{fadeDepth}(i) < \text{fadeDepth}(i-1)$ .

15